Models of Antisocial Behavior: A Comparative Analysis of Risk and Protective Factors Among African American and European American Adolescents

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Statement of the Research Problem

Crime and substance use among adolescents have become major issues for society and the social work profession. The increases in the levels of delinquent behavior, substance use, and juvenile justice system involvement among African and European American adolescents continue to challenge social work researchers to develop a better understanding of these social problems. Delinquency and substance use among adolescents have a compounding effect on academic achievement, employment opportunities, life expectancy, family, and community relationships. This research investigated the similarities and differences between African American and European American adolescents in the risk and protective factors associated with substance use and delinquent behavior.

Although it is illegal for adolescents to purchase or consume alcohol, it is estimated that over ten million 12 to 17 year olds have used alcohol and many report regular use (NIDA, 1991; Johnston, O'Malley, & Bachman, 1993). Research has shown that there is a correlation between alcohol use, drug use, and delinquent behavior (Watts & Wright, 1988; Elliott & Huizinga, 1984; Brook, Lukoff, & Whiteman, 1980). In a comparison of alcohol use among racial groups from the 1990 National Household Survey (NIDA, 1991), European American adolescents from ages 12 to 17 reported the highest prevalence rates for annual drinking at 46% and current drinking at 28%, whereas African Americans were significantly lower at 25% and 15%. In an analysis of ethnic group data from the National Seniors Survey (Monitoring the Future), similar findings were reported (Bachman, Wallace, O'Malley, Johnston, Kurth, and Neighbors, 1991). Peterson, Hawkins, Abbott and Catalano (1994), found that African American adolescents initiate alcohol use at a later age than European Americans.

Marijuana is the most widely abused illicit drug among adolescents. Marijuana use is associated with poor school achievement, school absenteeism, school dropout rates, low self-esteem, depression, delinquency, and use of other illicit drugs (Mensch & Kandel, 1988). More than 3.5 million (17%) of 12 to 17 year olds have tried marijuana, and in 1992, 6% were current users (NIDA, 1991; Johnston et al., 1993). Fifteen percent of eighth grade students and 35% of tenth grade students report that they have used marijuana at least once (Johnston et al., 1993). The differential use of marijuana has paralleled alcohol use in national studies. European American adolescents have reported higher prevalence of marijuana use than African

American adolescents. Though the data are inconsistent, the rates of use for African Americans are lower than European Americans. Small but significant differences between African American youth in the reported use of marijuana in comparison to European Americans have been revealed in various studies (Skager & Austin, 1993).

Current statistical data report that African American adolescents commit more delinquent acts and have higher rates of juvenile justice system involvement. In 1990, African Americans under eighteen years of age had higher arrest rates for murder, robberies, violent crimes, and drug abuse violations than European Americans. In that year, the juvenile crime arrest rates were 1,429 per 100,000 African Americans, five times that of European Americans at 274 per 100,000 (Uniform Crime Reports, 1992). These differences are even more pronounced for certain criminal behaviors. The juvenile murder arrest rate for African Americans is 7.5 times that of European Americans. African Americans were arrested at a rate of 47.3 per 100,000 and European Americans at a rate of 6.3 per 100,000.

Crime categories that have shown significant increases include drug abuse and weapon law violation. Crime statistics report that, between 1980 and 1990, the overall rate for juvenile arrests for drug abuse violations increased by 713%, representing a 2,373% increase for African Americans and a 251% increase for European Americans.

African Americans comprise 13% of the population. However, in 1990, they comprised 29% of all people arrested. This disproportionately is even greater for African Americans under 18 years of age, who accounted for over 50% of arrests for violent crimes committed by those in their age group (Uniform Crime Reports, 1992). Between 1965 and 1990, the crime rates for African Americans increased 100%. Within that same period, the crime rate for European Americans increased by 24% (Uniform Crime Reports, 1992). Between 1980 and 1990, the number of African American juveniles arrested for drug abuse rose by 158%, arrest rates grew by 102% for violations involving weapons, and murder and aggravated assault grew by 145% (Mauer, 1990, 1992).

The Juvenile Court Statistics indicated that the rate of referrals for African Americans in 1991 was 107 for every 1,000 children, more than double that of European Americans (Juvenile Court Statistics--1991, 1994). The largest increases in the number of juveniles adjudicated and confined was among African Americans. Existing research reveals higher rates of reported delinquency and crime among the African American than among the European American adolescent population, but consistently lower rates of alcohol and marijuana use in the African American than in the European American adolescent population. It is important to understand why we see these behavioral differences in prevalence across racial groups, especially since substance use and delinquency are themselves correlated.

The purpose of this project is to achieve a better understanding of the relationship between the different types of antisocial behavior and possible differences across racial groups. This research focuses on the differences and similarities in risk and protective factors as etiological predictors or deterrents of substance use and delinquent behaviors among these racial

groups. The project investigated the use of risk and protective factors as a method of understanding the involvement of adolescents in the juvenile justice system.

Research Questions

Risk factors are predictive of an increased probability of a subsequent undesirable outcome such as delinquency or substance use (Farrington & West, 1993; Stouthamer-Loeber, Loeber, & Farrington, 1993; Hawkins, Catalano, & Miller, 1992). Risk factors are contextual or interpersonal. Contextual factors are associated with the structure or values within the social context where the individual and his or her group exists. These factors include: norms and laws favorable to antisocial behavior, cultural norms, availability of drugs or weapons, poverty, and neighborhood disorganization (Hawkins, Catalano, & Miller, 1992). Interpersonal risk factors are those that have characteristics associated with the adolescent's personal environment and are correlated with a greater risk of antisocial behavior. In an adolescent environment these components are influential in shaping behavior and setting values, e.g., school, families, and peer groups (Hawkins et al., 1992).

There is evidence that there are many pathways to substance use and delinquency. This has led to the development model that focuses on risk factor approaches. It is hypothesized that with increased exposure to these factors there is an increased chance of an occurrence of these behaviors (Maddahian, Newcomb, & Bentler, 1986).

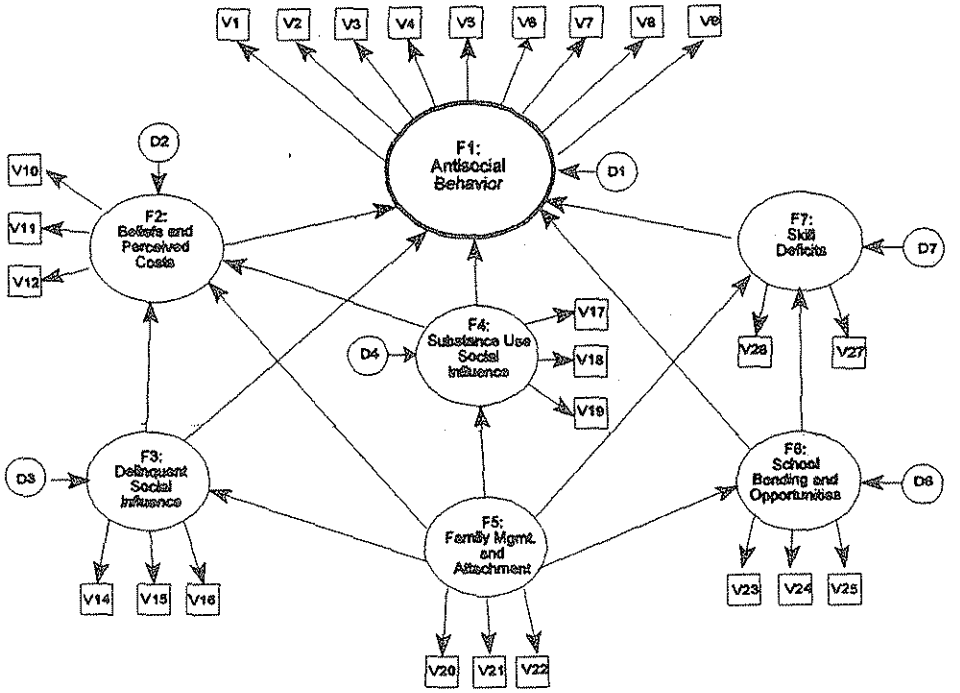
Criminologists and others have researched the implication of protective factors associated with the prevention and treatment of antisocial behavior (Farrington & Hawkins, 1991; Rutter, 1985; Farrington & West, 1993; Stouthamer-Loeber et al., 1993). Protective factors can be conceptualized in three different ways: as opposites to risk factors, as free-standing with no corresponding risk factor, and finally as a way to interact or buffer the effect of risk factors (Rutter, 1985; Cowen & Work, 1988; Werner, 1989). In this study, the concept of protective factors will be used to refer to variables that interact with risk factors so as to mediate or moderate risk exposure.

Contemporary research has given far too little attention to comparative study of the factors influencing antisocial behavior across racial groups due, in part, to the lack of strong multiethnic samples. Substance use and problem behavior among European Americans are considered to have a stronger correlation with emotional/psychological dysfunction, whereas among African Americans, social factors are more prevalent (Dembo, Williams, & Schmeidler, 1994).

The theoretical framework used for this investigation included social control theory which attempts to explain deviant behavior by maintaining that, while there is a natural impulse to deviate, the process of bonding by individuals to other social entities such as family, school, peers, and community have an inhibiting effect on such impulses (Hirschi, 1969). Social learning theory hypothesizes that the acquisition and maintenance of conventional or deviant

behavior depends on which behaviors are strengthened through rewards or punishment weakened by adverse stimuli or loss of reward (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Akers, 1985), and the social development model uses social learning processes to explain the development of social bonds capable of preventing or inhibiting substance use and delinquent acts. The social development model has been applied to delinquency and substance abuse acts. The social development model has been applied to delinquency and substance use and provides a developmental perspective in which risk factors can be investigated in various developmental periods (Hawkins & Weis, 1985). Although the canons of these theories and models have been empirically proven and tested, they lack rigorous testing across racial groups. These theories provided the foundation for the model (see Figure 1) that was developed and tested in this research.

The specific questions used to guide this research were as follows: 1) Can delinquent behavior, substance use, and juvenile justice system involvement be viewed as a single underlying structure of antisocial behavior across racial groups? 2) How well do the factors, as outlined in the proposed integrated model (see Figure 1) predict delinquent and substance use behavior and juvenile justice system involvement across racial groups? 3) What identified risk and protective factors are significant and act as predictors of, or deterrants to, delinquent and substance use behavior, and juvenile justice system involvement? 4) What are the similarities and differences in the pathways across racial groups within this sample?



Adapted from
Social Development Model
(Catalano & Hawkins)

Figure 1: Antisocial Behavior Model

Factors and Scale Captions for Figure 1

F1a = Substance use
V1 = alcohol consumption per month
V2 = marijuana consumption per month
V3 = problem behaviors related to substance use

F1b = *Delinquent behavior*
V4 = minor delinquent acts (graffiti, petty theft, and vandalism)
V5 = major delinquent acts (burglary, breaking and entering, and car theft)
V6 = violent acts (fighting and use of weapons)

F1c = *Juvenile justice system involvement*
V7 = number of times picked up or stopped by police
V8 = number of times arrested
V9 = number of days in juvenile detention

F2 = Beliefs and perceived costs of antisocial behavior
V10 = beliefs
V11 = perceived costs for substance use
V12 = perceived costs for delinquent behavior

F3 = Delinquent social influence
V14 = involvement with delinquent peers
V15 = number of delinquent siblings
V16 = delinquent peer network

F4 = Substance use social influence
V17 = involvement with substance using peers
V18 = number of substance using siblings
V19 = substance using peer network

F5 = Family management and attachment
V20 = family involvement and communication
V21 = proactive family management practices
V22 = attachment to family

F6 = School bonding and opportunities
V23 = rewards from school
V24 = opportunities for conventional classroom involvement
V25 = attachment and commitment to school

F7 = Skill deficits
V26 = social skill deficits as rated by teacher
V27 = school skill deficits as rated by teacher

Methodology

The subjects were participants in the Seattle Social Development Project, an ongoing longitudinal study seeking to identify childhood risks for adolescent drug use and delinquency. The sample was constituted in 1985 from a population of all currently enrolled fifth grade students in eighteen Seattle elementary schools (Hawkins, Catalano, Morrison, O'Donnell, Abbott, Day, 1992). The schools were sampled to overepresent students from high crime neighborhoods. The measures were derived from self reports elicited from face-to-face interviews of subjects ages twelve and fifteen. The outcome measures were created from surveys conducted during Spring 1991 when most students were completing tenth grade. The predictor measures were developed from surveys administered during the Spring of 1989 when most students were completing the eighth grade. This sample was restricted to the African American and European American population groups. Of the 567 subjects in this study, 66% (n = 372) were European Americans, and 34% (n = 195) were African Americans. The subjects in this study differed on sociodemographic variables such as SES, number of parents in the home, parents' level of education, and eligibility for free school lunches.

The latent (unmeasured) variables and their measured indicators (see Figure 1) with reliabilities are outlined as follows: *beliefs and perceived costs of antisocial behavior* [i.e. beliefs (α=.73), perceived costs for substance use (α=.80), and perceived costs for delinquent behavior (α=.66), and delinquent peer network (α=.85)]; *substance use social influence* [i.e., substance use peer bonding, substance using siblings (α=.56), and substance using peer network (α=.80)]; *family management and attachment* [i.e., family involvement and communication (α=.76), proactive family management practices (α=.69), and attachment to family (α=.65)]; *school bonding and opportunities* [i.e., school rewards (α=.73)]; and *skill deficits* [i.e., social skill deficits (α=.92), and school skill deficits (α=.84)].

The outcome variables addressed by this research are presented in three categories: *substance use* (i.e., monthly alcohol use, monthly marijuana use, and substance use problem behaviors); *delinquent behavior* (i.e., minor and major delinquent acts, and violent/aggressive acts); and *juvenile system involvement* (i.e., times picked up or stopped by police, times arrested, and days in juvenile detention).

The analyses strategy was conducted in two stages. Initially, confirmatory factor analyses were done using EQS to determine the structure of antisocial behavior (substance use, delinquent behavior, and juvenile justice system involvement) across racial groups by testing the invariance of the measurement model (Bentler, 1991; Byrne, 1994). These analyses were performed to determine the ability of the outcome variables to be analyzed as separate structural models. Structural equation modelling using EQS was conducted to test the path and causal structures of the integrated models (as shown in Figure 1) of predictors of delinquent behavior, substance use, and juvenile justice system involvement. Structural equation modeling was used as a technique for multigroup model testing and for identifying differences across racial groups by constrining paths to be equal. The comparative fit index (CFI) and chi-square statistics were used to determine the goodness of fit of the various models. Separate multigroup analyses of

the model fitting hypothesis were conducted using each outcome factor, i.e., substance use, delinquency, and juvenile justice system involvement.

Results

The results from the multigroup confirmatory factor analysis indicate that the three factor model fits the data better than the other models for European and African Americans. When these groups were allowed to have different loading factors and correlations, the unconstrained model had a comparative fit index (CFI) equal to .88 and $_x^2(48)=184.23$. The constrained model, where the factor loadings and correlations for these groups were held equal, had a CFI=.80 and $_x^2(60)=284.94$. The differences of $_x^2(12)$ across racial groups between the fit of the unconstrained and constrained models is 103.71 and had $p<.001$. Constraining the models to be equal for European Americans and African Americans significantly decreased the fit of the model.

The chi-square and comparative fit indices also revealed differences in model fit across racial groups between the two factor and three factor models of antisocial behavior. For European Americans, the CFI increased only slightly from .89 for the two factor to .90 for the three factor and the chi-square decreased only from 109.10 to 99.01. For African Americans, the CFI increased from .63 for the two factor to .85 for the three factor and the chi-square decreased from 178.73 to 84.68. These results clearly indicate that juvenile justice system involvement for European Americans was more closely associated with delinquent behavior, whereas they are two distinct factors for African Americans, thus indicating that juvenile justice system involvement is not always associated with this behavior (Williams, Ayers, Abbott, & Hawkins, in review).

The ability of the predictor factors to explain the variance in the outcome behavior was inconsistent across racial groups and models. The substance use models were explained with more consistency than the other models. The variance explained for the substance use models were approximately equal for both racial groups and the fit was equally strong. This would suggest that these predictor factors were comparable across racial groups when explaining substance use behavior. In explaining delinquent behavior, the predictive factors had a lower R^2 in comparison to the substance use model. The comparative fit index indicated the models were a good fit with a small R^2. These results suggested that the factors are good indicators, but other factors may increase the amount of explained variance. The low R^2 may be related to the small number of African Americans in the study.

There were large differences in the amount of explained variances for the juvenile justice system involvement/delinquency social influence predictor model across racial groups. When using delinquent social influence or substance use social influence as the predictor, more variance was explained for European Americans than for African Americans in the juvenile justice system involvement model. This would indicate that other factors would be needed to explain juvenile justice system involvement for African Americans. The R^2 for European

Americans was .66 and for African Americans was .28. In comparison, when using substance use social influence as a predictor of juvenile justice system involvement, the differences in the explained variance between racial groups is small. In comparing these two models, the CFI was strong for both racial groups.

The delinquent behavior model fit for European Americans was $_x^2(48)=202.05$, df = 109, CFI = .92, and a $_x^2$/df ratio = 1.85 and, for African Americans, the fit was $_x^2=152.33$, df = 109, CFI = .93, and a $_x^2$/df ratio = 1.40. The substance use model fit for European Americans was $_x^2=180.80$, df = 106, CFI = .94, with a $_x^2$/df ratio = 1.72, and for African Americans the fit was $_x^2=151.08$, df = 110, CFI = .93, with a $_x^2$/df ratio = 1.37. The juvenile justice system involvement models fit for European Americans was $_x^2=173.38$, df = 108, CFI = .95, and a $_x^2$/df ratio = 1.61, and for African Americans the fit was $_x^2=140.47$, df = 110, CFI = .95, and a $_x^2$/df ratio = 1.28 when using the delinquent social influence factor as a predictor. The juvenile justice system involvement model, when using substance use social influence as the predictor factor, had a fit for European Americans of $_x^2=177.02$, df = 108, CFI = .95, and a $_x^2$/df ratio = 1.63, and for African Americans the fit was $_x^2=118.42$, df = 110, CFI = .99, and a $_x^2$/df ratio = 1.08.

In the multigroup model analysis for the delinquent behavior model, the unconstrained model had a $_x^2=355.16$, df = 219, CFI = .93, and a $_x^2$/df ratio = 1.62, and the constrained model had a $_x^2=373.80$, df = 229, CFI = .93, and a $_x^2$/df ratio = 1.63. The differences between the unconstrained and constrained models of delinquent behavior across racial groups were $_x^2=18.64$, df =10, and had $p < .05$. For substance use, the unconstrained model had a $_x^2=335.22$, df = 217, CFI = .93 with a $_x^2$/df ratio = 1.54 and the constrained model had a $_x^2=349.95$, df = 226, CFI = .93 with a $_x^2$/df ratio = 1.55. The differences between the unconstrained and constrained models of substance use across racial groups were $_x^2=14.73$, df = 9 and had a $p < .07$. When using delinquent social influence as the predictor factor, the unconstrained model had a $_x^2=315.73$, df = 219, CFI = .95 with a $_x^2$/df ratio = 1.44, and the constrained model had a $_x^2=334.53$, df = 228, CFI = .94 with a $_x^2$/df ratio = 1.46. The differences between the unconstrained and constrained models of juvenile justice system involvement across racial groups were $_x^2=18.80$, df = 9 and had $p<.05$. When using substance use social influence as the predictor factor, the unconstrained model had a $_x^2=297.49$, df = 219, CFI = .96, with a $_x^2$/df ratio = 1.36, and the constrained model had a $_x^2=323.12$, df = 228, CFI = .95, with a $_x^2$/df ratio = 1.42. The differences between the unconstrained and constrained models of delinquent behavior across racial groups were $_x^2 = 25.63$, df = 9 and had $p<.005$.

Utility for Social Work Practice

The results suggested that social work intervention can be guided to reduce substance use and delinquent behavior across racial groups at risk for these behaviors. Family management and attachment was identified as a strong deterrent of antisocial behavior. The effect was stronger for African American families than for European American families. Peer influences were stronger predictors of antisocial behavior for European Americans than for African Americans. These intervention strategies of social workers should be targeted at specific risk

and protective factors. Intervention techniques such as family support and family centered treatment should be focused on identified risk and protective factors. The interaction of good family management practice has a direct positive influence on the factors that are considered to be causes of antisocial behavior. Social work intervention strategies must be family and peer inclusive to be effective in working with this population.

This study also provided insights that may be helpful to social work practitioners in their ability to better understand the structure of problem behavior across racial groups. This study has supported the contention that race and culture should be recognized as important factors in the structural understanding of the mid-adolescent problems of substance use, delinquency, and juvenile justice system involvement.

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